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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,329	03/25/2004	Kazuaki Sumita	0171-1077PUS1	5424
2292	7590	09/22/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			SELLERS, ROBERT E	
			ART UNIT	PAPER NUMBER
			1712	

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/808,329

Applicant(s)

SUMITA ET AL.

Examiner

Robert Sellers

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) 4-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-6 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All. b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/25/2004</u> | 6) <input type="checkbox"/> Other: _____  |

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1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-3, drawn to a composition comprising an epoxy resin, an aromatic amine curing agent, an inorganic filler and an ester organic solvent, classified in class 523, subclass 455.
  - II. Claim 4, drawn to the composition of Group I further comprising a silicone-modified resin, classified in class 525, subclass 476.
  - III. Claims 5 and 6, drawn to a semiconductor device, classified in class 257, subclass 793.

The inventions are distinct from each other because:

2. Inventions I and (II or III) are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as an adhesive formulation and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants.

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3. Inventions II and III are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful in a molding coposition and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants.

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Restriction for examination purposes as indicated is proper because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification.

4. During a telephone conversation with David R. Murphy on September 14, 2005, a provisional election was made with traverse to prosecute the invention of Group I, claims 1-3. Affirmation of this election must be made by applicant in replying to this Office action. Claims 4-6 are withdrawn from further consideration under 37 CFR 1.142(b) as being drawn to non-elected inventions.

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5. The molar ratio described on page 4, line 5 of the specification is unclear in the absence of a denominator for each value of the range, i.e. between 0.7:1 and 0.9:1. Page 11, lines 22-24 lists diethylene glycol alkyl ether acetates wherein the alkyl substituent is either monoethyl, ethyl, monobutyl or butyl. There is no distinction between the monoethyl and ethyl radical, or the monobutyl and butyl groups. Either the monoethyl or monobutyl species, or the ethyl or butyl species should be deleted to prevent redundancy.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 2 of copending application no. 10/618,765 in view of Japanese Patent No. 2002-121259, Qi et al. Patent No. 5,371,279; Japanese Patent No. 5-140267 and Bolger Patent No. 5,840,417. Although the conflicting claims are not identical, they are not patentably distinct from each other.

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6. The copending application claims the same liquid epoxy resin composition as those of the instant claims except for the presence of from 0.5 to 10 parts by weight per 100 parts by weight of the epoxy resin of an ester organic solvent.

7. Japanese '259 discloses a liquid sealing composition comprising an epoxy resin, diaminodiphenyl sulfone, an inorganic filler and a from 5 to 20 parts by weight per 100 parts by weight of the resins of a high boiling point solvent.

8. Qi et al. teaches a high boiling liquid such as butyl cellosolve acetate (col. 1, lines 9-12, i.e. the 2-butoxyethyl acetate designated as Solvent B on page 19, line 2 of the specification) or diethylene glycol monobutyl ether acetate (col. 2, lines 34-35, described on page 11, lines 22-23) as a solvent for epoxy resins.

9. Japanese '267 espouses the use of a blend of an organic solvent having a boiling point of 180-200°C such as butyl cellosolve acetate or diethylene glycol monomethyl ether, and an organic solvent with a boiling point of 140-170°C such as ethyl cellosolve acetate (i.e. 2-ethoxyethyl acetate).

10. Bolger describes a formulation containing an epoxy resin (col. 9, lines 59-61), a curing agent such as diaminodiphenyl sulfone (col. 9, line 67 to col. 10, line 1), a filler (col. 10, line 63 to col. 11, line 7) and an organic solvent such as a high boiling speices of butyl cellosolve acetate "to minimize too rapid dry-out during manufacture (col. 11, lines 29-32)."

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11. It would have been obvious to employ a high boiling solvent of Japanese '259 such as the acetate solvents of Qi et al., Japanese '267 and Bolger in the composition of the copending application in order to regulate the viscosity while abating rapid dryout during processing, at the proportion range of Japanese '259 to achieve a balance between optimal viscosity and the prevention of seepage (Japanese '259, pages 4-5, paragraph 19).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent No. 2002-121259 (Japanese '259) in view of Qi et al. Patent No. 5,371,279; Japanese Patent No. 5-140267 (Japanese '267) and Bolger Patent No. 5,840,417.

12. The references are described hereinabove. The claimed ester as the organic solvent with a boiling point of from 130-250°C is not recited. It would have been obvious to employ the acetate solvents of Qi et al., Japanese '267 and Bolger as the high boiling solvent of Japanese '259 in order to regulate the viscosity while abating rapid dryout during processing

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Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolger in view of Japanese '259.

13. The references are described hereinabove. Bolger does not recite the claimed proportion of from 0.5 to 10 parts by weight of ester organic solvent per 100 parts by weight of the epoxy resin and aromatic amine curing agent.

14. It would have been obvious to employ the butyl cellosolve acetate high boiling solvent at a concentration of from 5 to 20 parts by weight per 100 parts by weight of the resins in order to achieve a balance between optimal viscosity and the prevention of seepage (Japanese '259, pages 4-5, paragraph 19).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese '259 in view of Qi et al., Japanese '267 and Bolger as applied to claims 1 and 2 hereinabove, and further in view of Japanese Patent Nos. 10-158366 (Japanese '366), 9-176294 (Japanese '294) and Japanese Patent No. 60-92318 (Japanese '318).

15. Japanese '259 does not recite the molar ratio of epoxy resin:aromatic amine curing agent of from 0.7:1 to 0.9:1.



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16. Japanese '366 (translation, page 2, paragraphs 8 and 9), '294 (translation, page 2, paragraph 6) and '318 (Derwent abstract) are directed to blends of epoxy resins, an alkylated diaminodiphenyl methane or diaminodiphenyl sulfone (Japanese '318, an inorganic filler and a diluent (Japanese '366, page 3, paragraph 13, line 2) wherein the molar ratio of epoxy resin to alkylated diaminodiphenyl methane is as low as 0.9:1 (Japanese '318).

17. It would have been obvious to utilize the diaminodiphenyl sulfone of Japanese '259 at the molar ratio of as small as 0.9:1 or 0.8:1 of Japanese '366, '294 and '318 in order to optimize the degree of curing.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese '366 in view of Japanese '259, Qi et al., Japanese '267 and Bolger.

18. Japanese '366 espouses the inclusion of a diluent (page 3, paragraph 13, line 2) in the epoxy resin composition further comprising an alkylated diaminodiphenyl methane and organic filler wherein the molar ratio of epoxy resin:alkylated diaminodiphenyl methane is as low as 0.9:1.

19. The claimed from 0.5 to 10 parts by weight per 100 parts by weight of the epoxy resin of an ester organic solvent is not recited. The secondary references are discussed hereinabove.

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20. It would have been obvious to employ a high boiling solvent of Japanese '259 such as the acetate solvents of Qi et al., Japanese '267 and Bolger as the diluent of Japanese '366 in order to regulate the viscosity while abating rapid dryout during processing, at the proportion range of Japanese '259 to achieve a balance between optimal viscosity and the prevention of seepage (Japanese '259, pages 4-5, paragraph 19).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Sellers whose telephone number is (571) 272-1093. The examiner can normally be reached on Monday to Friday from 9:30 to 6:00. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).



Robert Sellers  
Primary Examiner  
Art Unit 1712